

ABSTRACT

Correction for harmonic disturbances on rotating storage media in a phase-locked loop. The effects of harmonic disturbances in a phase-locked loop are reduced by
5 employing harmonic correction. Harmonic correction may be present in the loop at all times, or may be switched in once the loop has achieved phase lock. Disturbance within the loop bandwidth is corrected using additional integrating pole or a bump (resonant) filter. Disturbance outside the loop bandwidth is corrected using low pass or a notch (anti-resonant) filter. Alternately, a canceling signal may be generated and added as a
10 feedforward signal. A repetitive control scheme uses a filtered version of the residual errors on previous media rotations as a feedforward signal to cancel harmonic effects.